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Patient and renal allograft outcomes of anticoagulation therapy in kidney transplantation.

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Introduction & Objectives

- There is increased risk of thromboembolic events post kidney transplant[1] which can often lead to complications such as graft loss[2]
  - These events are associated with both inherited and acquired thrombophilic risk factors such as Factor V Leiden mutation[3] and antiphospholipid syndrome[4]

- Many kidney transplant recipients are on anticoagulation or antiplatelet therapy for a variety of indications

- These medications may be associated with increased risk of bleeding[5], but they may also reduce the risk of thrombosis and associated complications[6]

- There remains a lack of guideline or consensus on perioperative anticoagulation or antiplatelet therapy

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Research Question & Hypothesis

- Research Question
  - The aim of our study is to review patient and allograft outcomes in the context of perioperative anticoagulation or antiplatelet therapy in the kidney transplant program at Thomas Jefferson University Hospital from 2012-2019.

- Hypothesis
  - Patients receiving perioperative anticoagulation or antiplatelet therapy will have higher risk of bleeding but lower risk of thrombosis and associated allograft loss compared to patients not on anticoagulation.

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Approach & Results

- Study design: Retrospective chart review
- Population: All patients who underwent kidney or kidney/pancreas transplantation at Thomas Jefferson University Hospital from 2012-2019
- Comparison groups: Patients receiving various forms of perioperative anticoagulation or antiplatelet therapy and patients not on any such therapy
- Outcomes:
  - Bleeding – transfusion utilization, invasive procedures
  - Thrombosis – imaging, return to OR
  - Graft outcomes
  - Graft function – creatinine at 30 days, 90 days, 1 year, 3 years
  - Mortality
- Other variables: risk factors for bleeding and thrombosis
- Data source: Epic

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Approach & Results

- Data
  - We have completed collecting data for the 872 kidney or kidney/pancreas transplants done at TJUH from 2012-2019.
- Analysis
  - Not yet complete, a statistician is currently working with the data.

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Approach & Results

- Hypothesized results:
  - Patients on perioperative anticoagulation or antiplatelet therapy will have higher rates and severity of bleeding, but lower rates of thrombosis.
  - Thrombosis episodes will be associated with greater allograft loss compared to bleeding episodes.

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Indications for Therapy

Indications for perioperative anticoagulation or antiplatelet therapy	Number of patients
Atrial fibrillation	
Coronary artery disease	
History of deep vein thrombosis	
Peripheral vascular disease	
Hypercoagulable state	
Valve replacement	
Unknown	

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Bleeding & Thrombosis

Peri-operative therapy	Patients requiring transfusion	Average number of units transfused	Hematoma on ultrasound	Hematoma on CT	Hematoma requiring drainage placement	Hematoma requiring return to OR	Thrombotic event	Thrombus requiring return to OR
None								
ASA								
Warfarin								
Clopidogrel								
Other								

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Graft Outcomes

Perioperative therapy	30 d Creatinine	90 d Creatinine	1 yr Creatinine	3 yr Creatinine	Graft loss	Mortality
None						
ASA						
Warfarin						
Clopidogrel						
Other						

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Conclusions

- Expected: patients on perioperative anticoagulation or antiplatelet therapy had higher rates and severity of bleeding, but lower rates of thrombosis and therefore allograft loss and mortality.
- These results would be generally in line with the current literature.
- This study will clarify the outcomes associated with perioperative anticoagulation or antiplatelet therapy.

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Future Directions

- The next step is to use the results of this study to develop guidelines for the use of perioperative anticoagulation at TJUH.
- This study could be expanded to a larger population.

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